NOVEL ONE-POT SYNTHESIS OF METHYL 4-HYDROXY-2-THIOXO-1,2-DIHYDROQUINOLINE-3-CARBOXYLATE: SYNTHETIC AND CRYSTALLOGRAPHIC STUDIES

Illia Mariutsa[1]*, Valentyn Chernykh[1], Sergiy Kovalenko[2]

[1]Department of Organic Chemistry, National University of Pharmacy, Kharkiv, Ukraine

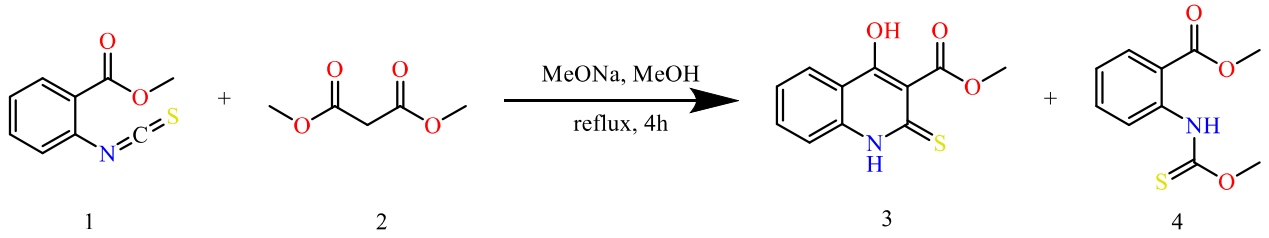
[2]Department of Organic Chemistry, V.N. Karazin Kharkiv National University, Ukraine

**Corresponding author e-mail: mariutsaillia@gmail.com*

Introduction. The search for new biologically active substances and their convenient synthesis - simultaneously with the main appeals to pharmaceutical science. Quinolones are known to the pharmacophore group, and then synthesize new biologically active compounds of the quinolone series, which may be promising for the discovery of new drugs, is a major challenge.

We have developed a convenient preparative method for the synthesis of new compounds, namely: methyl 4-hydroxy-2-thioxo-1,2-dihydroquinoline-3-carboxylate (3), which can be used as the main building block for the efficient synthesis of focused combinatorial libraries.

Materials and methods. Standard methods of organic synthesis were utilized in the study. All NMR spectra were recorded on a Varian MR-400 spectrometer - 1H NMR and 100 MHz for 13C NMR. For all NMR spectra, DMSO-d6 was used as solvent. Elemental analysis was performed on EuroEA-3000 CHNS-O Analyzer. Melting points were measured with a Buchi B-520 melting point apparatus. LC/MS spectra were recorded with ELSD Alltech 3300 liquid chromatograph equipped with a UV detector, API-150EX mass-spectrometer. UV/Vis spectra of solutions in CH3CN were recorded on a Specord 200 spectrometer. IR spectra in KBr pellets were recorded on a Bruker Vertex 70 FTIR spectrometer.



1 2 3 4

Results and discussion. This reaction was carried out in methanol with the presence of sodium methanolate, it was found that the reaction process was completed at reflux for 4 h. After neutralization of the reaction mixture with AcOH, the precipitate containing two products was formed. These pure substances were isolated by fractional crystallization from aqueous MeOH. The major product was methyl 4-hydroxy-2-thioxo-1,2-dihydroquinoline-3-carboxylate (3) with a yield of 70% and the minor was methyl 2-(methoxycarbonothioylamino)benzoate (4) with a yield of 20%.

Conclusions. This synthetic approach allows to obtain thioxoquinolines from commercially available conditions with high education and with the restoration of simple synthesis, which increases the efficiency of achieving positive results and

greatly reduces the cost of research.

The obtained class of compounds are of interest as new biologically active substances and have been transferred to the study of pharmacological activity.

References

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